Through an unfortunate oversight the name of Betty (Mrs. Herbert E.) Carnes was omitted from the list, published in the last issue of *The Bulletin*, of Americans attending the Tenth International Ornithological Congress in Sweden. Mrs. Carnes is President of the New Jersey Audubon Society. She has been a member of The Wilson Ornithological Club since 1944.

James P. Chapin, who is noted especially for his work on African birds, is now the President of the Explorers Club of New York. He was 'Distant Guest of Honor' at the recent twenty-seventh anniversary meeting of the Cleveland Bird Club.

We regret to announce that several defective copies of the December *Bulletin* were mailed to subscribers. If your copy of the issue had no colored frontispiece please write the Editor at once. A copy complete with color plate will be sent you if you will return the defective copy; or a separate color plate, which can be tipped in, will be sent. Please mail defective copies direct to the Editor.

Just as we go to press, Samuel A. Grimes, of Jacksonville, Florida, offers to have made "at no cost to the W.O.C." the color plates of the Wilson's Warbler kodachrome referred to editorially in our last *Bulletin*. Several other members already have made donations to the color plate fund. This money will be used in printing the plates Mr. Grimes so generously offers to have made.

Mrs. Marjorie Rine Olsen, of Elm Grove, West Virginia, has recently been helping her busy son Jim, our Treasurer, with some of the detail of his exacting job. For one thing she has been keeping straight all records pertaining to names and addresses of members. Mrs. Olsen deserves, and is hereby tendered, our thanks.

University and college students desiring free or inexpensive rooms during the April meeting of the Club should write at once to the Housing Committee, Davenport Public Museum, Davenport, Iowa.

The editors are grateful to the following for assistance in preparing for publication the material appearing in this issue: Aaron M. Bagg, Donald J. Borror, William L. Brudon, James B. Cope, William A. Lunk, Harold F. Mayfield, Ernst Mayr, Rogers McVaugh, Oscar T. Owre, Olin Sewall Pettingill, Jr., Elizabeth Reeder Schwartz, and Milton B. Trautman. Elsa Hertz, long a friend of the Club, has assisted through daily typing of letters and parts of manuscripts.

LETTER TO THE EDITOR

My admiration for the learning and stimulating hypotheses contained in W. J. Beecher's recent article "Convergent Evolution in the American Orioles" (1950. *Wilson Bulletin*, 62: 50–86) is unbounded. I feel, however, that the article ignores certain pertinent facts that, had they been included, might have led to conclusions very different from those presented.

Beecher separates the genus *Icterus* into two genera, *Icterus* and *Bananivorus*, on the strength of what he considers their independent origin from two ancestral South American genera. He thinks that evolutionary modifications have brought about color convergence in several modern species. These modifications have resulted, primarily, from "dietary" changes associated with climatic changes caused by geological events.

This interpretation of color evolution completely ignores a fundamental ornithological concept—namely, that the most striking color patterns in a very large number of species (males particularly) result from the needs of sex advertising, territorial advertising, warning, courtship display, and intraspecific recognition.

Similarly, the interpretation virtually ignores the colors of female orioles. Beecher does not explain why the diet and the climate that he believes have affected the males so remarkably has not similarly affected the females. Females are mentioned only casually and in only two sentences of the 36-page article. The statement, in one of these sentences, that "all orioles reaching the United States are sexually dimorphic" (p. 80) is not essentially true of either *I. graduacauda* or *I. gularis*. The interpretation likewise ignores the colors of immature birds. It is axiomatic that any attempt to trace phylogenetic relationships among birds must take account of immature and female plumages.

Beecher argues that all the American orioles are derived, ultimately, from a quite black ancestor, and that the general trend of evolution has been for black birds in one branch of descent to acquire yellow, and in another branch to acquire yellow, then black again. But, except for two South American species, *cayanensis* and *chrysocephalus*, *none of the 25 to 30 species of* Icterus *has anything approaching a quite black immature plumage*, and in no species does the female have more black in her plumage than the male. Furthermore (still excluding *cayanensis* and *chrysocephalus*), of the 60-odd forms of *Icterus* in which immature and female plumages are known, the immatures of all but one form (*bonana*) are predominantly yellow (i.e., yellowish, grayish yellow, or olive, etc.); and the females of all but 17 are predominantly yellow. In other words, it seems inescapable that the ancestry of practically all orioles but *cayanensis* and *chrysocephalus* contains a powerful yellow strain. Apparently, black figures little in their ancestry.

Instead of Beecher's two genera (which are weakly differentiated at best, and which contain many species whose inclusion in one genus or the other must be justified by only the most elaborate hypotheses and unverified assumptions) the scheme outlined below seems much more consistent with all the facts.

Icterus may be separated into three very distinct groups that might almost be regarded as subgenera:

1. *Black* birds with yellow shoulder patches. These are confined to South America. The females and young are quite dusky, or black like the males. One widespread species is involved: *I. cayanensis*.

2. *Black-throated* birds whose foreparts and underparts otherwise are yellow—though the black patch may sometimes extend over the face and across the forehead, and down to the breast. Their center of distribution is Central America, where they are numerous and variable. Of the 36 forms usually recognized, only one reaches North America (the region north of the Mexican border), three (of a single species) reach Jamaica and the Cayman Islands, and nine reach South America—though of the latter, three are conspecific with Central American forms, three have developed as isolated forms on small islands, and all are confined to the northernmost fringes of South America. Females of all forms are predominantly yellow, and nearly all immatures are quite yellow.

3. *Black-headed* birds with yellow (or reddish) rump. These are scattered over North, Central, and South America and the West Indies. In some species the sexes are alike; in some the females are yellow; and in most the young are yellow, or yellow with black throat. The troupials of South America (*I. icterus* and *I. jamacaii*) form a special subgroup in which the young are approximately like the adults.

This arrangement takes care of all the nearly 70 forms except *I. bullockii*, *I. jamacaii croconotus*, and *I. j. strictifrons*, all of which are obviously intermediate between black-throated and black-headed forms; *I. bonana*, an isolated insular "black-headed" form in which the head is "very dark chestnut or bay"; and the strange *I. chrysocephalus*. This last species is

almost entirely black; the sexes are alike; the immatures are dusky; it is confined to a relatively small area in South America adjoining the range of *I. cayanensis*; and (as Beecher says) it is probably derived directly from *I. cayanensis*. It should be grouped with the black orioles.

Considering all these facts—well-defined differences among the three groups of males, great similarity of the young and of the females within each group, great difference of young and females in the black group from those of other groups, peculiarities of distribution, well-marked predominance of certain forms in certain areas—I do not see how we can escape the following conclusions:

1. The *black* South American orioles (*I. cayanensis* and *I. chrysocephalus*) probably stem from a black ancestor (as Beecher says), are indigenous to South America, and have not spread away from there.

2. The *black-throated* orioles show no evidence of having stemmed from a black ancestor; they almost certainly stemmed from a yellow ancestor; probably they originated in Central America, and from there invaded southwestern North America and northern South America.

3. The *black-headed* orioles show no evidence (in immature and female plumages) of having stemmed from a black ancestor; many of them must have stemmed from a yellow ancestor; and some of them seem to have stemmed from a black-throated ancestor. Perhaps *I. jamacaii croconotus* and *I. j. strictifrons*, with only the throat and the front half of the head black, and with ranges remote from the black-throated forms, may be only relicts of the ancestral black-throated form; or perhaps they represent a reversion toward the ancestral black-throated form.

In summary, the black South American orioles represent a distinct branch of *Icterus*; and the black-throated and the black-headed orioles represent another branch—with a strong probability that at least some of the black-headed forms descended from black-throated forms.

A hypothesis that might account for the development of black-headed orioles from black-throated ones follows:

Though immatures and females of the family Icteridae may be black, brown, tan, buffy, or yellow indifferently, mature males of the family have developed (or retained) black color characters to an extraordinary degree. Apparently black has great significance (sexual, defensive, aggressive, or attractive) in the family. If black is thus at a premium, it seems likely that black would be especially desirable at the periphery of range, where breeding or survival conditions would be comparatively difficult. If, then, black-throated orioles of Central America have spread from their ancestral optimum range to become a peripheral population, we might expect them to have developed larger and larger areas of black plumage, and thus to have become black-headed.

Admittedly, this is hypothetical. But it would explain the very marked preponderance (also noted by Beecher) of black-headed forms at the periphery of the range of the black-throated forms—in the West Indies, North America, and South America.

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